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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,669	12/18/2000	Ranjit J. Rozario	388682000400	3488

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MORRISON & FOERSTER LLP
425 MARKET STREET
SAN FRANCISCO, CA 94105-2482

EXAMINER

SCHNEIDER, JOSHUA D

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,669

Applicant(s)

ROZARIO ET AL.

Examiner

Joshua D Schneider

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-14 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 6-8 and 15-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: in the specification, the term DMA is defined to mean Data Memory Access, where in the art, DMA is the well-established acronym for Direct Memory Access. As described by the applicant, the data memory access of a device moves data between the memory of a device and a peripheral, which is similar the definition of a direct memory access, though without the limitation of no microprocessor involvement in the transfer.

Appropriate correction is required.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5 and 14, and claims 6-8 and 15-18 dependent from 5-14, are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The term "in-flight" is not established in the art, does not enable one of ordinary skill in the art to practice or understand the invention. An artisan would be unable to assign the "in-flight" field without further detail as to its definition.

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5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 7, and 10, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "DMA" in claims 1, 7, and 10, is used by the claim to mean "Data Memory Access," while the accepted meaning is "Direct Memory Access." The Microsoft Computer Dictionary defines direct memory access as a memory access that does not involve the microprocessor and is frequently used for data transfer directly and an "intelligent" peripheral device such as a disk drive.

8. All further rejections and objections are made in light of the specification as best understood by the examiner in view of the previous rejections and objections.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claim 9 is rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The shifting structure as taught by the invention could not be embodied as a FIFO device. A FIFO device by definition is processed in a very linear fashion. The first object added is the first object removed, not allowing for shifting, or sorting.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-4, 10-13, and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,504,919 to Lee et al. in further view of U.S. Patent 6,052,375 to Bass et al.

With regards to claim 1, Lee teaches a shift structure having a plurality of entries, and a comparison logic circuit to sort the entries based on their respective weights (see abstract and Fig. 2). Lee does not teach the plurality of entries having a plurality of fields, or the entries being DMA channels. Bass teaches a scheduler for DMA channels data transfer. Bass teaches a plurality of fields in a parameter table (column 4, line 46, through column 5, line 38). Bass further teaches that queues are sorted for output to a traffic queue allocation manager (column 5, lines 42-44). Bass further teaches the DMA bus arbitration based on a straight priority fashion (column 5, lines 60-64). While Bass does not use the term weights, it would have been obvious to one of ordinary skill in the art at the time of invention, that the terms weight and priority are interchangeable in this context. Both words, as used in this application, indicate an importance or superiority in relation to competing entities. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the DMA scheduler with the shift structure of Lee, in order to increase the speed of sorting by increasing sorting efficiency.

13. With regards to claims 10 and 19, Lee teaches the writing of a plurality of entries into a shift structure, and a comparison logic circuit to sort the entries based on their respective

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assigned weights (see abstract and Fig. 2). Lee does not teach the plurality of entries having a plurality of fields, or the entries being DMA channels. Bass teaches a scheduler for DMA channels data transfer. Bass teaches a plurality of fields in a parameter table (column 4, line 46, through column 5, line 38). Bass further teaches that queues are sorted for output (column 5, lines 42-44). Bass further teaches the DMA bus arbitration selection based on a straight priority fashion (column 5, lines 60-64). It is inherent in Bass that the highest priority entry is read out for service (column 5, line 65, through column 6, line 2). With further regards to claim 19, it is inherent in Bass that all channels would be resorted after service as long as there is pending data. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the DMA scheduler with the shift structure of Lee, in order to increase the speed of sorting by increasing sorting efficiency.

14. With regards to claim 11, it is inherent in Bass that all channels would be resorted after service as long as there is pending data.

15. With regards to claim 2, Lee teaches the comparison of the entry, or item, for insertion with the sorted entries in the shift structure (column 3, lines 5-8).

16. With regards to claims 3, 12, and 20, Lee teaches the entry being inserted, or written, behind the sorted entries with higher weights and shifting of entries in the shift structure with lower weights (Fig. 1b, and column 3, lines 13-18).

17. With regards to claims 4, 13, and 21, Lee teaches the entries having a plurality of fields (Fig. 2), and Bass teaches the entries being made of a plurality fields each assigned to a set of bits (column 4, line 46, through column 5, line 38).

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18. With regards to claim 22, Bass teaches a priority field (column 5, lines 25-38), and it would have been obvious to one of ordinary skill in the art that a priority field would have a plurality of priority levels, as any binary field would have at least two levels.

19. With regards to claims 23 and 24, SONET is an interface standard that is well known, and OC numbers are well known in the art. It would have been obvious to one of ordinary skill in the art that a priority field could be set according to OC numbers as bandwidth prioritizing is well known in the art.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D Schneider whose telephone number is (703) 305-7991. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on (703) 308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

JDS
May 5, 2003


JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100